Designated Doctor and MMI/IR Doctor
Pre-course Cases

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Instructions

This document contains the maximum medical improvement (MMI) and impairment rating (IR) cases for the spine, upper extremity, and lower extremity that will be addressed during the upcoming certification course.

Please work the cases in advance of attending the course. The solutions to the cases will be discussed at the course.

Disclaimer

The material presented in this presentation is made available by the TDI-DWC for educational purposes only. The material is not intended to represent the only method or procedure appropriate for the medical situations discussed. Rather, it is intended to present an approach, view, statement, or opinion of the faculty, which may be helpful to others who face similar situations.

Spine Case 1, MMI/IR

History of Injury
A 25-year-old auto mechanic lifted a tire at work 4 months ago and experienced lower back pain following the incident.

Treatment History
He saw his family doctor the day of his injury and was diagnosed as having a lumbar sprain; however, the hand written records are largely illegible.

Initial treatment consisted of ibuprofen, cyclobenzaprine and tramadol, and he was restricted from returning to work in any capacity for two weeks.

He also had four visits of physical therapy in the family physician's office consisting of hot packs, electrical stimulation, and ultrasound.

He had follow up two weeks later reporting symptoms of pain extending into his right buttock with a "numbness and tingling" sensation in his right lateral thigh. He was given a prescription for meloxicam, instead of ibuprofen.

The family physician released him to return to work with restrictions of not lifting more than 20 pounds. His employer was able to accommodate these restrictions.

Imaging
Four weeks post injury, lumbar spine plain film x-rays and were obtained. They were reported to show moderate spondylosis at L4/L5.

Additional Treatment
Six weeks post injury, a pain management physician was consulted upon referral from the injured employee's family doctor.

The pain management physician's records reported "pain" with "lumbar ROM," mild weakness with right ankle dorsiflexion, and "positive" right SLR.

The pain management physician's changed his medication to Lodine and continued the work restrictions.

A Lumbar MRI showed disk desiccation at L4/L5 with a 5 mm right posterolateral disc protrusion at L4/L5, displacing the right L5 nerve root.

Designated Doctor Medical History
The chief complaint low back pain with radiation into the right buttock, posterior thigh, and anterolateral leg.

He is taking Lodine 400 bid, Zanaflex 4 mg bid.

Cholecystectomy 2004, right rotator cuff repair 2006. Parents are both alive, mother has history of diabetes.

Auto mechanic since 2000, present employer since 2005. Currently working with restrictions.

Associates degree in auto mechanics. Married 5 years with 2 children ages 4 and 2. Drinks approximately 1-2 alcoholic beverages (mostly beer) 2-3 days per week. Non-smoker. No history of substance abuse. Sleep disturbed due to back pain. No history of psychological distress or treatment.

Oswestry score is 52%. Pain scale 7/10.

Designated Doctor Physical Examination
VITALS: Height 70 inches, Weight 175 lbs, BP 130/82, Pulse 65, Respiration 16.

Pleasant affect. Cooperative with history and examination. Oriented to time, person and place, with normal attention span and concentration.

Able to rise from sitting to standing with difficulty assuming lumbar lordosis. Ambulates with normal gait. No scars on the back or trunk. Slight left trunk list.

Is able to walk on heels and toes, squat and perform 10 calf raises on each leg without obvious weakness.

However there is 4/5 strength the right EHL, right tibialis anterior, and right hip abductors; otherwise manual muscle testing shows 5/5 strength.

The patellar and Achilles DTRs are 2+ bilaterally. The medial hamstring reflex is not obtainable bilaterally. Sensation was slightly decreased over the right posterior thigh and anterolateral leg. There is no lower extremity atrophy. Pedal pulses were normal.

Supine SLR is 45° on the right where it produces increased sharp lower back pain extending into the right buttock and posterior thigh. The pain is worsened with ankle dorsiflexion and hip adduction/internal rotation and relieved with knee flexion/hip abduction/external rotation.

Left SLR was to 70° and produces hamstring tightness/discomfort only. Prone hip extension with knee flexion is limited only by hip flexor tightness without evidence of femoral nerve root tension signs.

There was some tenderness with palpation and hypertonicity of the lumbar paraspinal muscles, right quadratus lumborum at the L4 segmental level on the right, and the right gluteus medius (L4/L5/S1).

Based on the medical records and your examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Questions for the Designated Doctor to consider in the examination:

Has MMI been reached; if so, on what date?

A. Yes, 4 weeks post injury
B. Yes, 6 weeks post injury
C. Yes, date of Designated Doctor Exam
D. No, not at MMI

Spine Case 2, MMI/IR

History of Injury

A 25 year old male sandwich delivery driver was involved in a rear-end motor vehicle accident 8 months ago.

Treatment History

He saw his family physician 2 days later who found him to have restricted, painful cervical ROM and paraspinal tenderness. He diagnosed cervical sprain/strain, prescribed an NSAID and 6 visits of PT involving stretching exercises.

His symptoms of neck pain, restricted movement and occipital headache persisted.

He was able to return to part time work with restrictions.

Imaging
4 weeks post injury cervical spine x-rays were obtained which showed some mild C5/6 degenerative changes and decreased cervical lordosis.

6 weeks post injury cervical spine MRI scan was obtained, which showed disc desiccation and a 2 mm right paracentral disc protrusion at C5/6, not touching the thecal sac or nerve roots.

8 weeks post injury an upper extremity EMG / NCS was obtained and showed only some increased insertional activity in the bilateral mid cervical paraspinal muscles.

Insertional activity is subjective.

Paraspinal muscles innervated by posterior rami, so don't equate with a radiculopathy.

Additional Treatment
12 weeks post injury he saw a neurosurgeon. Surgery and cervical epidural injections were not recommended.

14 weeks post injury his family physician referred him to a chiropractor who performed manipulation and a McKenzie based exercise program, progressing into neck, and scapular strengthening exercises.

He was seen for 16 visits over 10 weeks with improvement in his symptoms, range of motion, functional activities.

He returned to full time work with restrictions.

The chiropractor's records at discharge (at 24 weeks post injury) documented pain scale of 4/10, Neck Disability Index (NDI) score 22%, and full cervical ROM.

The notes also show that he continued to have intermittent neck pain, provoked with neck flexion activities like reading and significantly relieved with McKenzie exercises.

He has no other treatment other than to see his family physician's PA for the purpose of being released to full duty 4 weeks after being released by the DC (*28 weeks post injury*). The PA did not document specific physical exam findings.

Designated Doctor Medical History
Chief complaint is neck pain.

Pain drawing shows an “ache” sensation in the right side of the neck.

He has been working full duty without restrictions for the last 4 weeks.

Neck Disability Index (NDI) score is 16%, 2/10 pain scale.

Designated Doctor Physical Examination
VITALS: Height 70 inches, Weight 175 lbs, BP 118/78, Pulse 64, Respiration 14.

Pleasant affect. Cooperative with history and examination. Oriented to time, person, and place with normal attention span and concentration.

No scars on the neck or visible deformity, scoliosis, or kyphosis.

Cervical right lateral flexion and right rotation are slightly decreased with right neck pain.

Cervical flexion, extension, left lateral flexion and left rotation are full and without pain.

There is no palpable muscle spasm of the cervical paraspinal muscles.

Upper extremity deep tendon reflexes, sensation, and strength are normal.

There is no upper extremity atrophy.

Designated Doctor Examination
Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Has MMI been reached; if so, on what date?

A. Yes, 24 weeks post injury
B. Yes, 28 weeks post injury
C. Yes, date of designated doctor exam
D. No, not at MMI

On the MMI date, what is the whole person IR?

A. DRE I = 0%
B. DRE II = 5%
C. DRE III = 10%
D. DRE IV = 20%

Spine Case 3, MMI/IR

History of Injury
25 year-old male roofer began having acute low back and right buttock pain after lifting and carrying shingles at work 8 months ago. He had worked as a roofer for 10 years.

Treatment History
Initially seen the day of the injury (DOI) at an occupational medicine clinic.

Diagnosed with a lumbar sprain/strain.

Treated with ibuprofen & cyclobenzaprine.

He had 6 visits of physical therapy - hip/lumbar flexion and rotation stretching, and some "stabilization" exercises.

Released to return to work with restrictions.

Restricted duty work was not available.

Reported he began having pain and numbness in the right posterior thigh and lateral calf doing "crunches" in physical therapy 5 days post injury.

Imaging
4 weeks post injury x-rays were obtained and showed moderate spondylosis at L5/S1 with bilateral pars defects with a Grade I isthmic spondylolisthesis also at L5/S1.

No evidence of segmental instability or alteration of motion segment stability on standing flexion and extension views.

8 weeks post injury, a lumbar MRI scan was obtained showing disc desiccation at L5/S1 and a 7 mm right posterolateral L5/S1 HNP displacing the right S1 nerve root.

Chronic bilateral pars defects are well established without increased T2 or Inversion Recovery signal changes consistent with an acute injury.

Additional Treatment
16 weeks post injury 1 lumbar epidural steroid injection was performed.

17 weeks through 24 weeks post injury – 14 visits of active physical therapy. Initiated lumbar extension range of motion exercises progressing into strengthening exercises and work simulation.

22 weeks post injury – released to return to work full duty.

Designated Doctor Medical History
Chief complaint of episodes of low back, right buttock, and right posterior thigh pain after prolonged sitting, repeated bending forward, or lifting.

Lower back, buttock, and right lower extremity symptoms had improved significantly.

He is not interested in pursuing additional injections or surgery at this time, but wants to "leave my options open as I have lifetime medical care for this injury."

As of 22 weeks post injury, has continued to work without restrictions.

Takes over-the-counter ibuprofen as needed and continues his exercises at home.

Oswestry score is 28%.

Designated Doctor Physical Examination
VITALS: Height 70 inches, Weight 175 lbs., BP 124/78, Pulse 62, Respiration 13

Pleasant affect. Cooperative with history and examination. Oriented to time, person and place, with normal attention span and concentration.

Ambulates with normal gait. No scars on the back or trunk or visible deformity, scoliosis or kyphosis.

Able to heel and toe walk without apparent weakness. Only able to perform 8 of 10 complete calf raises on the right due to weakness.

Lumbar flexion and right lateral flexion are moderately restricted; extension and left lateral flexion are essentially full.

Supine left SLR is accomplished to 60° limited only by hamstring tightness.

Supine right SLR is limited to 44° where it produces right low back and right buttock pain; further increased with ankle dorsiflexion and hip adduction/internal rotation.

Right ankle inversion and eversion are 4/5.

Bilaterally symmetric Patellar, medial hamstring and Achilles deep tendon reflexes (DTRs).

Decreased sensation of the right calf and lateral foot.

1 cm of right calf atrophy.

Palpation reveals tenderness and hypertonicity of the right lumbosacral paraspinals and gluteus maximus

Designated Doctor Examination
Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Is the injured employee at MMI?

A. Yes, at completion of initial 6 visits of PT
B. Yes, at 22 weeks post injury when released to full duty
C. Yes, at 24 weeks post injury when he completed additional PT and ESI
D. Yes, date of designated doctor exam
E. No, not at MMI

On the Date of MMI, what is the whole person IR?

A. DRE I = 0%
B. DRE II = 5%
C. DRE III = 10%
D. DRE IV = 20%

Spine Case 4, MMI/IR

History of Injury
A 25-year-old male construction worker began having acute low back and right posterior thigh pain after carrying some lumber at work 10 months ago.

Treatment History
He was initially seen at an occupational medicine clinic and treated with 6 visits of physical therapy and 2 different NSAIDs without improvement in his symptoms or activity tolerance.

He was released to return to work with restrictions; however, his employer was unable to accommodate the restrictions and told him to return “when you are 100%.”

Imaging
6 weeks post injury, plain film x-rays and a lumbar MRI scan were obtained due to persistent symptoms.

Plain film x-rays showed with moderate spondylosis at L5/S1.

The lumbar MRI scan showed a 7 mm posterolateral right L5/S1 HNP displacing the right S1 nerve root.

Additional Treatment
9 weeks post injury he had a translaminar lumbar epidural steroid injection at L5/S1 without significant improvement.

16 weeks post injury he underwent a right L5/S1 hemi-laminotomy/discectomy resulting in some relief of his lower extremity symptoms.

28 weeks post injury - He was able to return to full duty work.

This was 12 weeks after surgery and after completing 14 visits of post-operative active rehabilitation.

Medical History
Chief complaint was low back pain and right leg pain and weakness.

Oswestry score is 32% and pain scale is 3/10.

Physical Examination
VITALS: Height 70 inches, Weight 175 lbs., BP 128/82, Pulse 68, Respiration 14.

Pleasant but somewhat flat affect. Cooperative with history and examination. Oriented to time, person, and place, with normal attention span and concentration.

Able to rise from sitting to standing with no abnormal motion. Ambulates with normal gait.

Well healed approximate 3 cm surgical scar at the midline lumbosacral junction. No visible deformity, scoliosis, or kyphosis.

Able to walk on heels, weakness on right toe walk.

4/5 strength of right toe flexion; ankle inversion and eversion; and knee flexion.

Lumbar flexion and right lateral flexion are moderately decreased; extension and left lateral flexion are essentially full.

Left SLR is 65° limited by hamstring tightness.

Right straight leg raise is limited to 45° where it produces right low back and right buttock pain, further increased with ankle dorsiflexion.

Patellar DTRs are 2+ bilaterally. The right Achilles DTR is decreased.

Repetitive calf raises on the right reveals some weakness.

2 cm of right calf atrophy.

There is some palpatory tenderness and hypertonicity of the lumbar paraspinal muscles at the right lumbosacral junction.

Designated Doctor Examination
Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Questions for the Designated Doctor to consider in the examination:

Is the injured employee at MMI?

A. Yes, 6 weeks post injury
B. Yes, 28 weeks post injury
C. Yes, date of designated doctor exam
D. No, not at MMI

On the Date of MMI, what is the whole person IR?

A. DRE I = 0%
B. DRE II = 5%
C. DRE III = 10%
D. DRE IV = 20%

MMI/IR – Upper Extremity Case 1

History of Injury
25 y.o. male was working as a tractor driver 3 months ago and was loading a pallet when another tractor smashed him against a wall. He sustained crush injuries to his right wrist and right upper arm. He had severe pain and loss of function in the wrist and shoulder.

Treatment History
He was seen at the ER for open wounds and fractures of the right wrist and humerus.

He underwent debridement of the wounds and open reduction of the fractures.

He was discharged from the hospital 3 days later after IV meds and told to follow up with an orthopedic surgeon.

The company sent him the next day to an occupational medicine clinic for evaluation.

He was placed on restricted duty.

There is no “light duty,” employer advised “Come back when you are 100%.”

The occupational medicine physician followed him while he was in a cast.

Six weeks later he saw an orthopedic surgeon.

The ortho removed the cast, and x-rays showed healed fractures. The ortho refers him for PT.

Placed on restricted duty work “No use of right arm.”

There is no “light duty,” so he is told to stay home.

After 3 weeks of PT (9 sessions), the insurance company denies additional PT and submits a DWC Form-032 requesting a DD exam for MMI & IR.

The insurance adjustor says he “has healed” and is at MMI.

Designated Doctor Medical History
He states he cannot use his right arm well at all, especially above shoulder level.
It is “really weak.”

His right shoulder and wrist are “stiff.”

He has no complaints of pain.

The PT helped, but he has not had any PT in about 3 weeks - he is doing it a home.

He says he wants to work, “but my boss won’t let me.”

Designated Doctor Physical Examination:
X-rays (UE) - fractures healed, hardware in good position

Shoulder flexion 80°, extension 20°, Adduction 20°, abduction 80°, IR 10°, ER 40°

Wrist flexion 20°, extension 20°, radial deviation 10°, ulnar deviation 10°

Elbow/forearm pronation 40°, supination 40°

Major weakness in multiple planes, wrist and shoulder.

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for designated doctor:

Has MMI been reached; if so, on what date?

A. Yes, at the completion of 3 weeks of PT (9 sessions).
B. Yes, date of the designated doctor exam.
C. No, not at MMI.

MMI/IR - Upper Extremity Case 2

History of Injury
25 y.o. male punch press operator 4 months ago accidentally amputated the tip of the left index finger with punch press machine.

Treatment History
He was seen in the ER, evaluated, and referred to a hand surgeon.

A day later, he was taken to the OR for debridement.

The operative report noted traumatic amputation of left index finger tip with complete loss of fingernail and most of the distal phalanx of the left index finger.

Treatment History
He was followed by him with adequate healing. There were 24 post op PT visits.

He has returned to work with restrictions per his surgeon.

The doctor also recommended additional PT.

Designated Doctor Medical History
Occasional swelling / aching left index

Meds: Metformin / Vicodin

Well healed scar, no redness / swelling

Absence tip / fingernail.

Amputation just distal to the DIP of the left index finger

Transverse sensory loss tip of index finger - rest of hand intact

Normal range of motion strength, sensation, neurovascular intact

Designated Doctor Physical Examination
Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for designated doctor:
Has MMI been reached; if so, on what date?

A. No, not at MMI.
B. Yes, date of Designated Doctor Exam.
C. Yes, date he completed 24 visits to PT.
D. Yes, date last seen by his surgeon.

On the Date of MMI, what is the whole person IR? Show your work!

A. 30%
B. 6%
C. 5%
D. 3%

Upper Extremity Case 3 MMI/IR

History of Injury
25 year old chef sustained a laceration to the radial aspect of his left index finger while slicing meat.

He was seen at a local emergency department where the wound was irrigated and debrided.

The wound healed without complication, and he returned to work.

The IE reached statutory MMI and a designated doctor examination was requested.

Designated Doctor Physical Exam
Well healed scar between the PIP and MP of the left index finger with 12 mm 2 point discrimination on the radial side of the left index finger.

Full ROM of the index finger

5/5 strength of the fingers and wrist

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for the Designated Doctor:
On the Date of MMI, what is the whole person IR?

A. 14%
B. 3%
C. 2%
D. 1%

Upper Extremity Case 4 MMI/IR

History of Injury
25 year old male one year ago developed pain over the dorsal hand overlying the first metacarpal.

He was diagnosed with DeQuervain's tenosynovitis of the right thumb secondary to repetitive injury.

Occupation is dental technician.

Treatment History
He has had 12 PT sessions and 2 steroid injections followed by abductor pollicis longus tendon sheath released 6 months ago.

This was followed by 16 PT sessions post surgery.

He was released by his surgeon to return to work 3 months ago without restrictions.

He is now being followed by a family physician who is recommending additional PT and work conditioning.

The insurance carrier adjustor requested a designated doctor examination for MMI and IR. The accepted/compensable injuries/conditions are:

“DeQuervain’s Tenosynovitis of the right thumb.”

Designated Doctor Medical History
He complains of occasional thumb discomfort but indicates some relief with OTC NSAIDS as needed for pain.

He is working without restrictions.

He has no other complaints but reported his family physician is suggesting additional PT and WC.

Designated Doctor Physical Examination
Your examination shows a well healed scar consistent with his surgery.

There is mild tenderness over the scar.

Sensory is normal. Neurovascular is intact.

Right thumb exam

IP flexion 70°, extension 10°

MP flexion 50°, MP extension 0°

Abduction 70°

Lack of adduction = 1cm (Adduction to 7cm)

Able to oppose to 7cm from the palm

5/5 strength

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for the Designated Doctor:
On the Date of MMI, what is the whole person IR? Show Your Work!
A. 10%
B. 8%
C. 3%
D. 1%

Upper Extremity Case 1 MMI/IR (The Sequel)

Crush injury Right wrist and upper arm

Open fractures humerus and radius

2nd DD appointment (+20wks later)

Designated Doctor Medical History
Extra 4 months of PT helped a lot. UE is stronger and more mobile.

IE is back at work full duty but can't reach overhead the same.

Designated Doctor Physical Examination
Shoulder ROM

- Flexion 130°
- Extension 40°
- Abduction 120°
- Adduction 50°
- IR 20°
- ER 60°

Wrist ROM

- Flexion 30°
- Extension 40°
- Radial deviation 10°
- Ulnar deviation 20°
- Forearm/elbow ROM
- Pronation 80°
- Supination 70°

5/5 strength right wrist and shoulder with manual muscle testing

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for the Designated Doctor:
On the Date of MMI, what is the whole person IR?

A. 23%
B. 14%
C. 13%
D. 11%

Upper Extremity Case 5 MMI/IR CTS

History of the Injury
A 25 year old right handed male meatpacking worker presents to the family physician, who is also providing workers compensation care for the local company, with a 2 month duration of slow progressive onset of numbness and tingling of the right thumb, index finger, and middle fingers.

Treatment History
The patient has been a meatpacking worker for 5 years.

His most recent job is with a whizzard knife cutting shoulder flanks of pork product.

This involves a line speed of 780 per hour.

He is right handed, using the whizzard knife with the right hand and a hook with the left hand.

Medical History
10 year history of diabetes mellitus (takes oral medicine, not insulin)

Family practitioner exam:
- Positive Tinel's and Phalen's test on right
- No thenar muscle wasting
- Night time wakening with hand/finger numbness

Diagnosis of right CTS

Family practitioner recommends:
- Night time wrist splint
- Ibuprofen
- Occupational therapy for 3x per week for 2 weeks
- Alternate duty (no knife or hook work)
- Off work status for 2 weeks

The worker returns after 2 weeks with no improvement.

Family practitioner treatment:
- Injection of the carpal tunnel
- OT referral
- Continued use of splint
- Being completely off work for 4 more weeks

The worker returns 4 weeks later (6 weeks post injury) with no change.

Family practice doctor refers to hand surgeon for consultation regarding release surgery.

Hand surgeon recommends endoscopic carpal tunnel release.

Injured worker declines surgery.

The insurance carrier adjuster requested a designated doctor examination to determine MMI and IR.

The designated doctor examination is 12 weeks post injury to determine MMI and IR.

Designated Doctor Medical History:
He presents to the DD exam with c/o right hand/finger numbness and tingling worse at night.

Has RTW and is playing Frisbee golf, but sensory loss interferes with his ability to perform these and other ADLs. (For ADLs to use for Grade see T. 11, P. 48) due to the loss of sensation.

His surgeon recommended surgery, but he does not want to do this.

Designated Doctor Physical Examination:
Examination of both hands indicated no thenar atrophy.

He has full ROM of both wrists.

No edema, changes in skin blood flow, and/or abnormal sudomotor activity in the right hand or forearm

Upper Extremity Case 5 MMI/IR CTS

Good grip strength bilaterally at position 2 – right 110#, left 102#.

Sensory exam shows decreased sensation to median nerve distribution of the palmar aspects of the radial and ulnar distributions of the right thumb, index, and middle fingers.

Tinel's and Phalen's tests are positive on the right.

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for the Designated Doctor:
On the Date of MMI, what is the whole person IR?

A. 60%
B. 36%
C. 22%
D. 13%

Upper Extremity Case 6 MMI/IR RCR with distal clavicle resection

History of Injury
A 25 year old teacher slipped and fell into the wall with his arm to his right side, contacting his dominant right shoulder 16 months ago.

Treatment History
He initially saw an occupational medicine physician and was found to have significant tenderness over the right AC joint and reduced right shoulder ROM.

Right shoulder X-rays revealed a Type III acromion but no fracture or dislocation.

Initial treatment included the use of a sling and NSAIDs, followed by 12 visits of physical therapy, with some improvement.

He was able to return to work with restrictions.

His symptoms persisted and a right shoulder MRI scan was obtained 2 months post injury, revealing a partial thickness tear of the supraspinatus tendon, increased signal in the subacromial bursa, type III acromion, and degenerative changes of the AC joint.

Orthopedic surgical consultation was obtained, where arthroscopic acromioplasty with distal clavicle resection and rotator cuff repair were performed.

He completed a course of post-operative PT, consisting of 30 visits over 6 months.

He returned to work full time as a teacher while in PT.

Designated Doctor Medical History
He is working full time as a teacher with restrictions to avoid lifting overhead with right arm.

Reports he has not been able to successfully complete yoga class.

His QuickDASH score is 50.

Designated Doctor Physical examination:
Active and resisted left shoulder ROM is full and pain- free.
He has 5/5 strength of bilateral upper extremities with the exception of right shoulder flexion, abduction, and external rotation, which were 4/5 due to pain.

Resisted "empty can," Hawkin's and Neer's are positive for increased pain and weakness.

Upper extremity sensation and DTRs are normal. There is no atrophy and upper extremity pulses are normal.

Active goniometric right shoulder ROM:
- flexion 160°
- extension 40°
- abduction 120°
- adduction 30°
- internal rotation 30°
- external rotation 30°

All with complaints of increased right shoulder pain.

Passive shoulder motions are greater than active motion and less painful.

Question for the Designated Doctor:
On the Date of MMI, what is the whole person IR?

A. 20%
B. 12%
C. 11%
D. 4%

MMI/IR – Lower Extremity Case 1

History of Injury
A 25-year-old landscaper was planting a hedge when he stepped in a hole and twisted his right knee.

By the next morning, his knee was swollen and he had difficulty with walking.

He saw his family physician the next day and was diagnosed with a knee sprain.

Treatment History
Initial treatment included ibuprofen and ice and he was taken off work for one week.

When he returned for follow up in one week, he was no better with persistent swelling and loss of range of motion.

He was sent for an MRI scan of his right knee.

The MRI scan showed an oblique tear of the posterior horn of the medial meniscus and a partial tear of the anterior cruciate ligament.

His family physician referred him to an orthopedic surgeon.

Four weeks post-injury, he saw an orthopedic surgeon who recommended arthroscopic partial medial meniscectomy and ACL reconstruction.

The patient really wanted to avoid surgery and the surgeon prescribed physical therapy 3 times a week for 4 weeks.

When he completed physical therapy, he had less swelling, improved range of motion, strength, and better functional activity. He wished to try returning to work at full duty.

However, when he returned to landscaping work, his knee kept locking and giving way.

He returned to the orthopaedic surgeon to pursue surgery.

Designated Doctor Medical History
He is seen 3 weeks post-op from a right knee arthroscopic partial medial meniscectomy and ACL reconstruction.

He is scheduled to begin physical therapy next week.

Designated Doctor Physical Examination
Stable vital signs, height 6 feet 1 inch, weight 180 lbs.

Right knee shows healing surgical wounds and arthroscopic portals.

His gait shows a shortened stance phase on the right, but he is not using any assistive device.

He has mild right knee swelling and a moderate effusion.

He has atrophy of the right VMO with right thigh circumference of 51 cm and left of 53 cm.

Some weakness to right quad set, 4/5 strength of right knee extension and flexion.

His right knee ROM is extension -5 degrees and flexion of 100 degrees.

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for designated doctor:

Has MMI been reached; if so, on what date?
A. Yes, date of Designated Doctor Exam.
B. Yes, when he returned to work.
C. Yes, date of the visit with the surgeon.
D. No, not at MMI.

MMI/IR - Lower Extremity Case 1 (The Sequel)

Designated Doctor Medical History
The injured worker returns to see you for a subsequent DDE 5 months later (36 weeks post-injury) after his right knee partial medial meniscectomy and ACL reconstruction.

He completed 24 physical therapy visits and returned to full duty work one month ago (32 weeks post-injury).

PT discharge records document 5/5 right LE strength, full extension, and 135 degrees of flexion.

He is back to work as a landscaper without any problems and reports minimal pain mostly over the patellar tendon graft site when kneeling, which he rates as a "1/10."

Designated Doctor Exam (36 weeks post-injury)
Well-healed surgical scars.

No right knee swelling or effusion

No weakness to right quad set, manual muscle testing shows 5/5 strength
to right knee flexion and extension

Mildly positive anterior drawer and 1+ Lachman's

No atrophy with both right and left thigh circumference measuring 53 cm.

Right knee ROM of extension of 0 degrees and flexion of 140 degrees.

Designated Doctor Physical Examination
Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

Question for designated doctor:
Has MMI been reached; if so, on what date?
A. Yes, 32 weeks post injury.
B. Yes, 36 weeks post injury.
C. No, not at MMI.

On the Date of MMI, what is the whole person IR?
A. 0%
B. 1%
C. 3%
D. 4%

MMI/IR – Lower Extremity Case 1 (additional scenario 1)

Designated Doctor Exam at MMI:
ROM is 0 degrees extension and 105 degrees of flexion.

McMurray's is negative

No cruciate ligament laxity

On the Date of MMI, what is the whole person IR?
A. 0%
B. 1%
C. 3%
D. 4%

MMI/IR – Lower Extremity Case 1 (additional scenario 2)

Designated Doctor Exam at MMI
ROM is 0 degrees extension and 130 degrees flexion
No cruciate ligament laxity

The DD notes that the operative note describes the surgical procedure as ***"arthroscopic medial meniscus repair and ACL reconstruction"***

What is the whole person IR?

A. 0%
B. 1%
C. 3%
D. 4%

MMI/IR – Lower Extremity Case 2

An IE had a work-related injury that resulted in a left total knee replacement.

When seen for DDE, he is determined to be at MMI.

Physical exam shows:

- Occasional pain with stairs only
- No A-P instability, 5° of M-L instability
- Flexion contracture 5° and extension lag 8°
- Alignment 7°
- ROM minus 8° extension and flexion 85°

On the Date of MMI, what is the whole person IR?

A. 20%
B. 30%
C. 40%
D. 50%

MMI/IR – Lower Extremity Case 3

History of Injury

A 25-year-old data entry clerk was involved in a frontal impact motor vehicle, injuring his left leg.

Treatment History

He was seen in the ER where x-rays showed a trimalleolar fracture of his left ankle.

He was taken to the OR where he had an ORIF of the left ankle.

Post-operatively, he was noted to have some continued left knee pain and swelling.

An MRI scan of the left knee was obtained and showed an undisplaced tibial plateau fracture.

His orthopedic surgeon recommended non-operative treatment with cast-brace immobilization and non-weight-bearing.

He underwent 25 visits of physical therapy for both the knee and ankle over 4 months.

Follow-up x-rays of the ankle and the knee showed healed fractures without displacement.

30 weeks post injury
PT notes:

- Performing resisted left knee flexion/extension ankle flexion/extension, and eversion/inversion exercises.
- 5/5 strength bilateral knee flexion/extension, ankle flexion/extension, and eversion/inversion.
- Ankle ROM mildly decreased.
- Full knee ROM.
- Discharged to his home exercise program, follow-up with treating doctor.

Treating Doctor documents “doing well, has progressed with PT, released to RTW as a data entry clerk without restrictions, follow-up prn.”

He has been able to continue working with these restrictions and states he can walk and perform his daily activities without much difficulty.

Designated Doctor Medical History

9 months (36 weeks) post injury

Chief complaint - left knee and ankle pain “3-4/10.”

Working full time with restrictions (last 6 weeks).

Designated Doctor Physical Examination
VITALS: Height 66 inches, Weight 140 lbs, BP 120/78, Pulse 64, Respiration 14.

Pleasant affect. Cooperative with history and examination. Oriented to time, person and place, with normal attention span and concentration.

Healed surgical scars left ankle.

He ambulates with decreased stance and push-off phase left leg. Does not require the use of an assistive device to walk.

There is 1 cm of left calf atrophy and bilaterally symmetric thigh circumference.

Normal lower extremity sensation.

Plantar flexion is 15° and dorsiflexion is 8°. Inversion is 15° and eversion is 10°.

Left knee range of motion is 120° flexion and 0° extension.

Manual muscle testing shows 5/5 strength of ankle plantar flexion, dorsiflexion, inversion and eversion, knee flexion and extension.

Based on the medical records and your physical examination of the injured employee, **what is the compensable injury for certifying MMI and IR?**

On the certified MMI date, what is the whole person impairment rating?

A. 2%
B. 3%
C. 6%
D. More than one correct answer, show your work.

Thank You

Please bring the completed cases to the training course so you can review your answers.